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Mazdoor Kisan Shakti Sangathan

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“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 4964 (2003): Textiles - Vest, Cotton, Plain (Single Jersey) Knitted [TXD 10: Hosiery]

“ज्ञान से एक नये भारत का निर्माण”

Satyanaaranay Gangaram Pitroda

Invent a New India Using Knowledge



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”



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भारतीय मानक

वस्त्रादि — सादी (सिंगल जर्सी) बुनी (निटटेड)
सूती बनियान — विशिष्टि
(चौथा पुनरीक्षण)

Indian Standard

TEXTILES — VESTS, COTTON, PLAIN
(SINGLE JERSEY) KNITTED — SPECIFICATION
(*Fourth Revision*)

ICS 60.020

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

FOREWORD

This Indian Standard (Fourth Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Hosiery Sectional Committee, had been approved by the Textile Division Council.

This standard, originally published in 1968, was subsequently revised in years 1975, 1980 and 1991. This standard has been again revised on the basis of experience gained in its implementation. Following are the major changes carried out in this revision:

- a) Requirements of depth of hem, width of folding or width of tape/welt at various places in vests has been modified.
- b) Scouring loss requirement has been deleted.
- c) Amendments issued earlier version have been incorporated.

The composition of the Committee responsible for formulation of this standard is given in Annex C.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

TEXTILES — VESTS, COTTON, PLAIN (SINGLE JERSEY) KNITTED — SPECIFICATION

(Fourth Revision)

1 SCOPE

1.1 This standard prescribes the requirements of grey, scoured, bleached, dyed or printed plain (single jersey) knitted cotton vests with or without sleeves having round or V-neck.

1.2 This standard also covers vests tailored from coloured plain knitted cotton fabric obtained by knitting with dyed yarn.

1.3 This standard does not specify general appearance, feel, lustre, degree of whiteness, shade, colour or print design of vest (see 5.3).

2 REFERENCES

The standards given in Annex A contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated in Annex A.

3 TERMINOLOGY

For the purpose of this standard the definitions given in IS 3596 (see also SP 45) in addition to following shall apply.

3.1 Folding — A process of covering a cut edge of a fabric with a piece of fabric by folding and stitching, for giving appropriate finish to the vest as an embellishment.

4 MANUFACTURE AND FINISH

4.1 Fabric

The vest shall be tailored out of well and evenly knitted tubular fabric (see IS 9469). The width of fabric roll from which the vest is to be tailored shall correspond to the size of the vest.

4.1.1 In case of short sleeves round-neck vest with welts (see Fig. 3), the welting at the sleeves end shall be made of two layers of 1×1 rib knitted fabric knitted from cotton hosiery yarn of the same count as used for the plain knitted fabric.

4.1.2 In case of vests with folding, folding shall be given at neck, armhole or sleeves covering the cut edge of the vest with a piece of the same or finer texture fabric as used for the vest.

4.2 The design and shape of vest shall be as detailed below. The wales shall run along the length of the vest and sleeves:

- a) Round-neck sleeveless (RN), Fig. 1A and short sleeves (RNS), Fig. 1B.

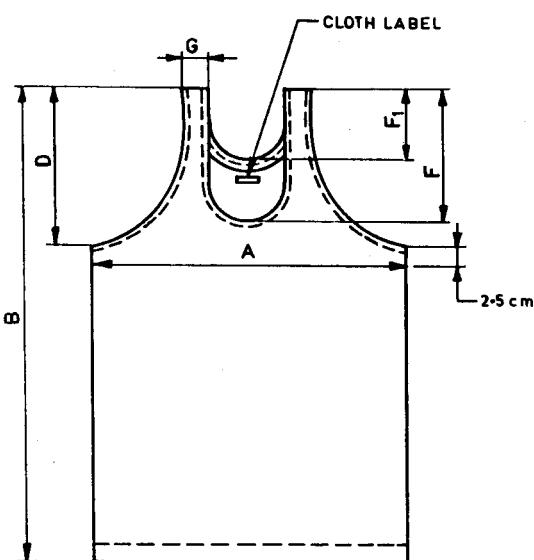


FIG. 1A ROUND-NECK SLEEVELESS

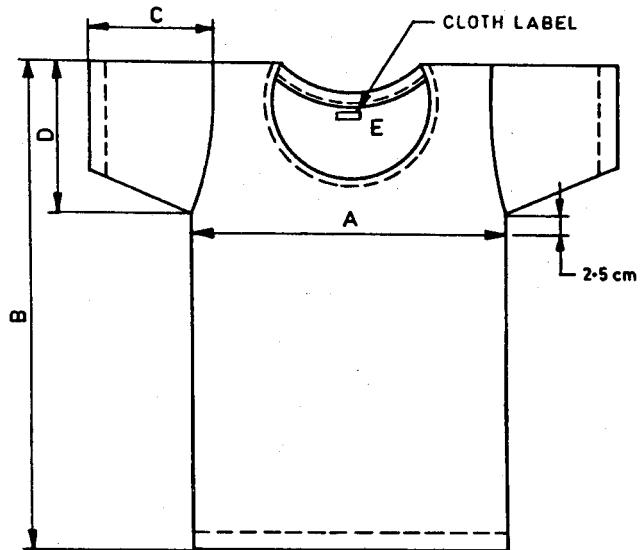


FIG. 1B ROUND-NECK SHORT SLEEVES

- b) V-neck, sleeveless (VN), Fig. 2A and short sleeves (VNS), Fig. 2B; and
- c) Round-neck short sleeves with welts (RNW), Fig. 3.

4.2.1 When pockets are provided to cotton vests by stitching an extra piece of fabric, the same fabric as used for making cotton vests shall be used. Size and shape of the pocket shall be as agreed to between the buyer and the seller.

4.3 Seams and Stitches

4.3.1 The type of stitch (see IS 11161) and count of sewing thread (see IS 10789) for seams and stitches at various portions of vest shall be as given in Table 1. However, the vest with folding shall be sewn by reverse flat-lock as detailed in Table 1 Sl No. (iv).

4.3.2 The minimum depth of hem, width of folding or width of tape/welt at bottom, at arm holes, at sleeves and at neck opening when measured according to B-4 shall be as under:

	<i>Size¹⁾</i> All dimensions in millimetres.		
	40 to 70	75 to 90	95 to 110
Depth of hem or width of folding at neck and armhole opening for RN vest	5	8	9
Depth of hem or width of folding at neck opening for RNS vest	5	8	9
Width of folding at bottom for all vest and at sleeves for RNS/VNS vest	5	8	9
Depth of hem at bottom for all vest and at sleeves for RNS/VNS/RNW vest	15	20	25
Width of tape/welt at bottom for all vests and at sleeves for RNS/VNS/RNW vest	10	15	20
Width of tape/welt at neck opening for VN/VNS vest and at armhole openings for VN vests	10	15	20

¹⁾ See Note under 5.1.

4.3.3 For RNW vests, the bottom shall be suitably finished by lock stitching.

4.4 The knitted fabric from which vest is tailored shall not be over boarded.

4.5 The tailored vest may also be screen or transfer printed with motifs or designs as agreed to between the buyer and the manufacturer.

4.6 Freedom from Defects

The vests shall be visually examined and these shall be free from defects such as missed stitches, holes and cuts, oil stains or any other defect which may significantly mar the appearance of vest.

5 REQUIREMENTS

5.1 Dimensions

The dimensions of vests when measured by the method prescribed in Annex B shall conform to the

requirements given in Tables 2 and 3.

NOTE — The size is designated by a number which is numerical value of chest girth of vest in cm. For example, an 80 size vest represents the vest with chest girth of 80 cm.

5.2 Other Requirements

The vests shall satisfy the requirements in respect of construction, dimensional change (due to relaxation), pH value of aqueous extract and colour fastness (including prints on finished vest) as given in IS 9469.

5.3 Sealed Sample

In order to illustrate or specify the indeterminable characteristics such as general appearance, degree of whiteness, colour, shade or print design of vest, a sample has been agreed upon and sealed, the supply shall be in conformity with the sample in such respects.

5.3.1 The custody of the sealed sample small be a

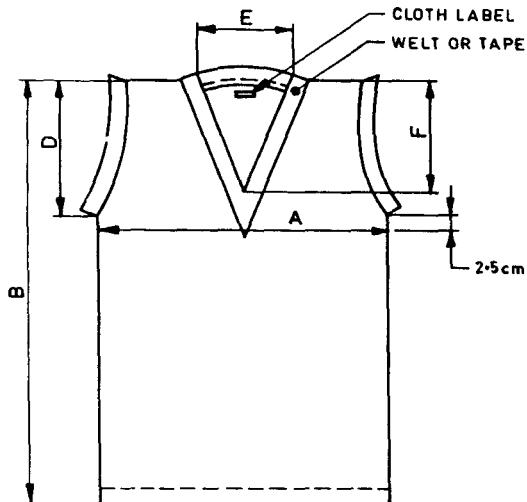


FIG. 2A V-NECK SLEEVELESS

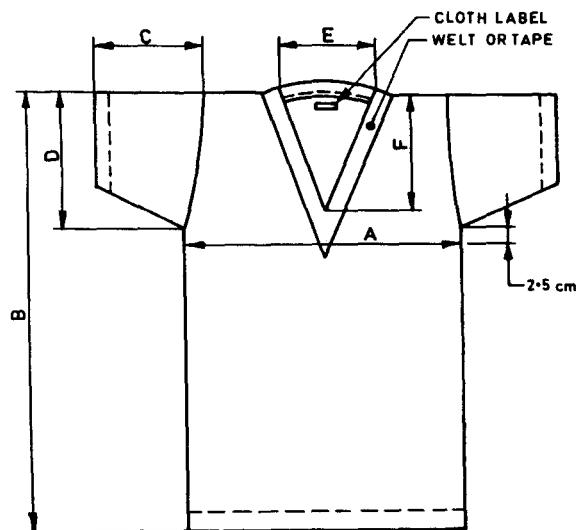


FIG. 2B V-NECK SHORT SLEEVES

Table 1 Seams and Stitches

(Clause 4.3.1)

Portion to be Stitched (1)	Type of Stitch (2)	Number of Stitches per cm, Min (3)	Recommended Thread ¹⁾ in the Needle(s) (4)	Recommended Thread ¹⁾ in the Looper(s) (5)
i) Shoulder pieces, sleeves to the vest and underarms, tape/welt sewn to neck-opening armholes, sleeves and bottom	3 thread overlock	4	One strand of 60s/3 (100 d tex × 3) cotton sewing thread	Two strands of 40s/2 (145 d tex × 2) cotton sewing thread
ii) Hemming at the bottom and elbow ends of sleeves	2/3 thread overlock	4	One strand of 60s/3 (100 d tex × 3) cotton sewing thread	1/2 strand(s) of 40s/2 (145 d tex × 2) cotton sewing thread
iii) Hemming at sleeves and armholes of sleeveless vest	a) Double chain or b) Flat lock	4	One strand of 60s/3 (100 d tex × 3) cotton sewing thread Three strands of 60s/3 (100 d tex × 3) cotton sewing thread	One strand 60s/3 (100 d tex × 3) cotton sewing thread One strand of 40s/2 (145 d tex × 2) cotton sewing thread in combination with one strand of 33 tex (300 denier) rayon or Both the strands of cotton sewing thread or rayon of the particular stated above
iv) Folding at sleeve, neck opening and armhole	Reverse flat lock	4	Three threads of 60s/3 (100 d tex × 3) cotton sewing thread	One strand of 40s/2 (145 d tex × 2) cotton sewing thread in combination with one strand of 33 tex (300 denier) rayon or Both the strands of cotton sewing thread or rayon of the particulars stated above

¹⁾ For sewing threads refer to IS 1720 Variety No. 2, 3, 4, 5, 12, 13, 15 or 16; or IS 9543 Variety No. 1, 2, 3, 4 or 5.

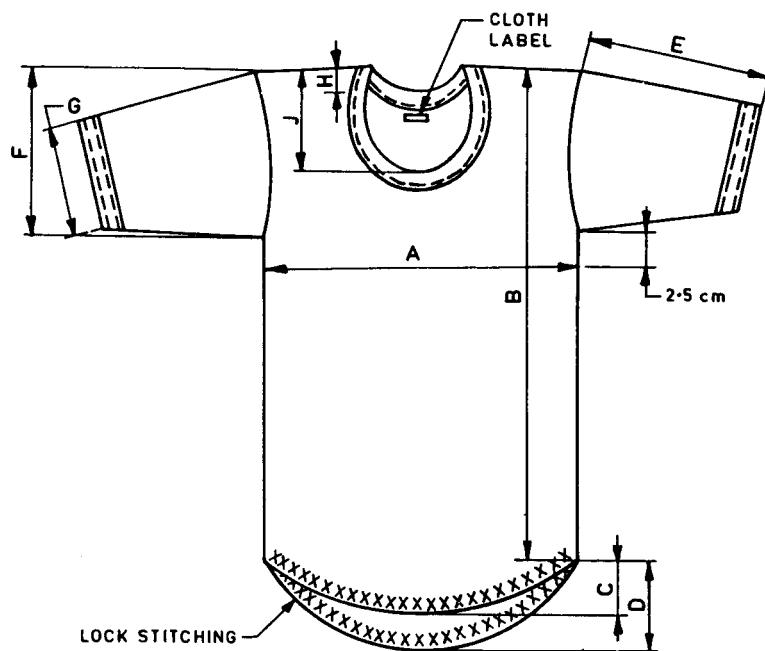


FIG. 3 ROUND-NECK SHORT SLEEVE WITH WELTS

Table 2 Dimensions of Vest — Round-Neck/V-Neck, Sleeveless (RN or VN) and Short Sleeves (RNS or VNS)
(Clause 5.1)

All dimensions in centimetres.

Size	Width Across Chest	Length of Vest	Length of Sleeves RNS/VNS	Length of Armhole RN/RNS/VN/VNS	Round Neck Opening RNS	RN			VN/VNS		
						Min	Min	Min	Min	Min	Min
A	B	C	D	E	F	F ₁	G	E	F		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
40	20.0	32.0	8.0	10.0	42.0	11.0	5.0		7.0	8.0	
45	22.5	36.0	9.0	11.0	44.0	11.0	5.0		7.0	9.0	
50	25.0	40.0	10.0	13.0	46.0	13.0	5.0		8.0	10.0	
55	27.5	44.0	11.0	14.0	49.0	13.0	5.0	1.5	9.0	11.0	
60	30.0	48.0	12.0	15.0	52.0	14.0	6.0		10.0	13.0	
65	32.5	52.0	13.0	16.0	54.0	14.0	6.0		11.0	14.0	
70	35.0	56.0	14.0	18.0	56.0	15.0	7.0		12.0	15.0	
75	37.5	60.0	15.0	19.0	58.0	15.0	7.0		12.0	16.0	
80	40.0	64.0	16.0	20.0	60.0	16.0	7.0		13.0	18.0	
85	42.5	68.0	17.0	21.0	61.0	16.0	7.0		14.0	19.0	
90	45.0	72.0	18.0	23.0	62.0	18.0	9.0	3.0	15.0	20.0	
95	47.5	76.0	19.0	24.0	63.0	18.0	9.0		16.0	21.0	
100	50.0	80.0	20.0	25.0	64.0	19.0	9.0		17.0	23.0	
105	52.5	82.0	21.0	26.0	65.0	19.0	9.0		17.0	24.0	
110	55.0	84.0	22.0	27.0	65.0	20.0	9.0		18.0	25.0	
Tolerance	±1.5	-1	±1.0	±2.0	±3.0	—	—	—	—	—	—

Table 3 Dimensions of Round-Neck Short Sleeves Vest, with Welts (RNW)
(Clause 5.1)

All dimensions in centimetres.

Size	Width Across Chest	Length of Vest				Length of Sleeves Including Welting	Width of Armhole ¹⁾	Width at Sleeve End	Neck Opening ¹⁾		
		A	B	C	D				E	F	G
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
80	40.0	55.0	8.0	10.0	20.0	20.0	11.0	3.0	14.0		
85	42.5	56.5	8.5	10.5	21.0	21.0	11.0	3.0	14.0		
90	45.0	62.0	9.0	11.5	22.0	22.0	12.0	3.0	15.0		
95	47.5	63.5	9.5	12.0	23.0	24.0	13.0	3.5	15.0		
100	50.0	66.0	10.0	12.5	24.0	25.0	14.0	3.5	16.0		
105	52.5	68.5	10.5	13.0	25.0	26.0	15.0	3.5	16.0		
110	55.0	71.0	11.0	13.5	26.0	27.0	16.0	4.0	17.0		
115	57.5	73.5	11.5	14.5	27.0	28.0	17.0	4.0	17.0		
Tolerance	±1.5	-1.0	-1.0	-1.0	±1.0	±2.0	+1.0	±3.0	+1.0 -0.5		

¹⁾These dimensions may be varied if desired by the buyer due to geographical conditions or the preference of consumers. However, the declared values shall be subjected to the tolerance specified.

matter of prior agreement between the buyer and the seller.

6 MARKING

6.1 A suitable cloth label, woven or printed, shall be fastened to each vest at the inside of the neck portion (backside) on which the following shall be indicated:

- a) Size in cm (*see 5.1*);
- b) Name of manufacture or trade-mark, if any;
- c) Designation of the fabric; and
- d) Care labelling, if required by the buyer (*see IS 14452*).

NOTE — The colour from the label shall not bleed on to the vest during storage or use.

6.2 BIS Certification Marking

The vest may also be marked with the Standard Mark.

6.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the license for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

7 PACKAGING

The vest(s) shall be packed in polyethylene or polypropylene bags and in box(es), as required by the buyer. However, each box shall also be marked with the following:

- a) Name of the material;
- b) Count of yarn and type (carded or combed);
- c) Designation of the fabric;
- d) Vest design (*see 4.2*) and size in cm (*see 5.1*);
- e) Quantity per box;
- f) Name of manufacturer; and
- g) Any other information as required by buyer or the law in force.

8 PACKING

8.1 The boxes containing vests shall be packed as agreed to between the buyer and the seller, preferably in bales or cases in accordance with IS 3086 or IS 3325 as the case may be.

9 SAMPLING AND CRITERIA FOR CONFORMITY

9.1 Lot

In any consignment all vests of the same size and

manufactured from plain knitted fabric knitted from the same count of yarn and delivered to a buyer against one dispatch note shall constitute a lot.

9.1.1 The conformity of a lot to the requirements of this standard shall be determined on the basis of the tests carried out on the samples selected from the lot.

9.2 Unless otherwise agreed to between the buyer and the seller, a number of vests depending upon the size of the lot shall be selected at random from the lot to constitute the gross sample. The number of vests so selected shall be in accordance with col 1 of Table 4.

**Table 4 Sample Size and Permissible Number of Non-conforming Vests
(Clauses 9.2 and 9.3)**

Number of Vests in the Lot	Physical Characteristics		Other Requirements (Number of Vests to be Tested)
	Number of Vests to be Inspected	Permissible Number of Non-conforming	
(1)	(2)	(3)	(4)
Up to 300	13	1	3
301 to 500	20	2	5
501 to 1 000	32	3	5
1 001 and above	50	5	8

9.3 The number of vests to be tested and criterion for conformity for each of the characteristics shall be as follows:

<i>Characteristics</i>	<i>Number of Vest to be Tested</i>	<i>Criterion for Conformity</i>
a) <i>Physical</i> Freedom from defects, manufacture and dimensions	<i>See col 2 of Table 4</i>	Non-conforming vests not to exceed the corresponding number given in col 3 of Table 4
b) <i>Other Requirements</i> Construction, dimensional change and pH value of aqueous extract	<i>See col 4 of Table 4</i>	All the vests to satisfy the relevant requirements
c) <i>Colour Fastness</i>	1 each of same colour, shade and/or print for lot size up to 500, and 2 above 500	All the test specimens to satisfy the relevant requirements

ANNEX A

(Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
1720 : 1978	Cotton sewing threads (<i>second revision</i>)	9469 : 1991	Textiles—Fabric, cotton, rib-knitted — Specification
3086 : 1965	Code for seaworthy packaging of cotton hosiery yarn and goods	10789 : 1983	Classification and terminology of stitch types used in seams
3325 : 1965	Code for inland packaging of cotton hosiery yarn and goods	11161 : 1985	Textiles — Seam types — Classification and terminology
3596 : 1967	Glossary of terms relating to hosiery	14452 : 1997	Textiles—Care labelling code using symbols
6359 : 1971	Method for conditioning for textiles	SP 45 : 1988	Handbook on Glossary of textile terms
9543 : 1980	Spun polyester sewing threads		

ANNEX B

(Clauses 4.3.2 and 5.1)

METHODS OF TEST

B-1 CONDITIONING OF TEST SPECIMENS AND ATMOSPHERIC CONDITIONS FOR TESTING

B-1.1 The test specimen shall be tested in prevailing atmospheric conditions. In case of dispute, the sample shall be conditioned and tested in the standard atmosphere as given in IS 6359.

B-2 DIMENSIONS

B-2.1 Take each vest constituting the test specimens. Lay it flat on a table. Remove by hand all creases and wrinkles without distorting the specimen. Measure nearest to 0.5 cm, the dimensions given in Table 2 or 3 as the case may be. For RNS vest, the method recommended in **B-3** may be followed for measuring the dimensions of neck opening.

B-3 MEASUREMENT OF ROUND NECK OPENING

B-3.1 Measurement of round neck opening shall be carried out by running the periphery of round neck opening along a measuring scale preferably starting from the shoulder seam and coming back to the same point. It shall be ensured that vest is not stretched and all creases are removed. The dimension shall be measured nearest to 0.5 cm.

B-4 MEASUREMENT OF DEPTH OF HEM OR WIDTH OF FOLDING

4.1 Lay down a vest flat on a table. Remove all creases and wrinkles without distorting the specimen. Measure with the help of a scale the depth of hem or width of folding nearest to 1 mm. Measurement of depth of hem or width of folding at neck opening, armhole opening or at bottom of the vests shall be made at 5 equidistant points and report the average value.

ANNEX C

(Foreword)

COMMITTEE COMPOSITION

Hosiery Sectional Committee, TX 10

<i>Organization</i>	<i>Representative(s)</i>
The South India Textile Research Association, Coimbatore	SHRI T. V. RATNAM (Chairman) DR S. RAMASWAMY (<i>Alternate</i>)
Anand Hosiery, Tirupur	SHRI A. PREMANAND
Apparel Export Promotion Council, New Delhi	SHRI V. VIJAY KUMAR
B. K. Thapar Hosiery Works, Ludhiana	SHRI B. K. THAPAR
Chitratalaya Banian Co, Tirupur	SHRI R. VIJAYKUMAR SHRI PRAMANAYAGAM (<i>Alternate</i>)
Crystal Knitters, Tirupur	SHRI S. JAYABAL
Directorate General of Supplies and Disposals (Inspection Wing), New Delhi	SHRI A. K. SEHGAL SHRI SUNDER LAL (<i>Alternate</i>)
Ditty Hosieries, Tirupur	SHRI V. GUNASHEKARAN
Friends Knitting Company, Tirupur	SHRI K. ARUNACHALAM SHRI K. R. PALANISAMY (<i>Alternate</i>)
Githanjali Knitting Mills, Tirupur	SHRI V. RICHARD DANIEL
Indian Petrochemicals Corporation Ltd, Vadodara	SHRI S. M. MEHTA SHRI B. C. ASUDANI (<i>Alternate</i>)
Knit Fab Industries, Chandigarh	SHRI K. L. AHUJA
Knitwear Club, Ludhiana	SHRI VINOD THAPAR
Merry Knitting Co, Tirupur	SHRI T. N. S. KUMARESAN
Ministry of Defence (DGQA), New Delhi	SHRI P. C. BASU SHRI T. P. SINGH (<i>Alternate</i>)
Ministry of Defence (R&D), Kanpur	SHRI R. INDU SHEKHAR SHRI D. N. MISRA (<i>Alternate</i>)
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Office of the Textile Commissioner, Mumbai	SHRI S. P. KALA SHRI S. CHAKRABARTY (<i>Alternate</i>)
Pin Knitting Co, Tirupur	SHRI S. SIVA KUMAR
P.V.S. Knittings, Tirupur	SHRI P. MURUGASAMY
Southern India Mills Association, Coimbatore	SHRI K. SELVARAJA
Textiles Committee, Mumbai	SHRI RAM SINGH SHRI P. KRISHNAN (<i>Alternate</i>)
Tirupur Exporters Association, Tirupur	SHRI G. KARTHIKEYAN SHRI M. JAGANNATHAN (<i>Alternate</i>)
The Bengal Hosiery Manufacturers' Association, Kolkata	SHRI BISWANATH GHOSH SHRI S. K. MITRA (<i>Alternate</i>)
The South India Hosiery Manufacturers' Association, Tirupur	SHRI N. KANDASWAMI
T.T. Industries, Delhi	SHRI R. C. JAIN SHRI SANJAY KUMAR JAIN (<i>Alternate</i>)
West Bengal Hosiery Association, Kolkata	SHRI B. L. SHARMA
BIS Directorate General	SHRI P. BHATNAGAR, Director and Head (TXD) [Representing Director General (<i>Ex-officio</i>)]

Member Secretary

SHRI B. L. BHARATI

Joint Director (TXD), BIS

Bureau of Indian Standards

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Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters :

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110 002
Telephones : 2323 0131, 2323 33 75, 2323 9402

Telegrams : Manaksantha
(Common to all offices)

Regional Offices :

Central	: Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110 002	{ 2323 7617 { 2323 3841
Eastern	: 1/14 C.I.T. Scheme VII M, V. I. P. Road, Kankurgachi KOLKATA 700 054	{ 2337 8499, 2337 8561 { 2337 8626, 2337 9120
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